1:Williams E,G-5 (1923-1925) 1930
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133 731 The experience of a Government official in the early days will show to what extent these floods may go:

'From the date of our arrival (Oct. 12) until the end of May we had one long series of floods in the Mambare River. Scarcely a week passed without a flood, and sometimes we had five or six consecutively at night. On six or eight occasions the floods were exceptionally heavy, and the water rose from two to three feet above the level of the banks. The highest ground is immediately adjacent to the river, for in the forests a short distance back the water was many times 6 and 8 feet deep.' [1]

The rapidity with which the flood-waters sink is somewhat surprising when we consider the very gradual fall of the ground. Sometimes, it appears, the damage to native gardens may be serious, but this is not often so; and the pile-built village, although often enough within reach of the flood, sustains no permanent injury.

The Seasons

132 The floods belong to the 'North-West' season, i.e. they occur roughly speaking between October and March, when the north-west monsoon is blowing. This is the period of greater rainfall throughout the territory.

Reports published in 1922 give the following results for the three Government stations in the Northern Division.[2]

Station.	*Period.*	*Mean Rainfall (Annual).*	*Three Wettest Months.*
Buna	12 years	113 in.	Nov., Dec., Jan.
Kokoda	12 „	131 „	Nov., Jan., Feb.
Ioma	11 „	161 „	Dec., Jan., Mar.

The difference between the 'North-West' and the 'South-East' seasons is fairly well marked, though it is one of rain, temperature, and humidity, rather than one of wind, as the names would imply. Whatever winds may fly overhead there is an almost dreary stillness in the forests of the plain,

[1] John Green, Government Agent, in *Annual Report*, 1895–6, p. 77. The writer adds: 'The natives during the heavy floods had to sleep in their canoes.' It may be remarked that such a situation would be entirely exceptional, for the flood-water very rarely reaches the floor-level of the house.

[2] *Annual Report*, 1921–2, p. 87.

1:Williams E,G-5 (1923-1925) 1930
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varied, indeed, by occasional squalls that may do considerable damage among the luxuriant but flimsy vegetation.

The South-East season is perceptibly drier and much more pleasant than the North-West. This becomes especially apparent to the traveller who in the former season can make a good pace over excellent native tracks, but in the latter must do more than a little wading. A former *Annual Report* gives the following account of the Aiga country: 'The track between Bogi and Tamata has the reputation of being in bad weather the worst in the Possession. The greater part of it passes through flat country, intersected by sluggish creeks and pandanus swamps. After heavy rain it is flooded for miles waist deep.'[1] One may reasonably doubt whether the Aiga country is often deserving of this description; but making allowance for a little pardonable exaggeration on the part of one who had evidently met with unpleasant conditions, we may take his word for it that in bad weather the tracks are very wet.

The contrast afforded by the drier months of 'winter' may be striking. Sometimes a long spell of sunny rainless weather, with refreshing, almost chilly, nights may lead to a serious dearth of food, and compel the natives to supplement their diet with a variety of leaves, roots, and fern-fronds from the bush. Although such scarcity never reaches the point of famine it may nevertheless be serious enough. The drought has in fact far more terrors for the Orokaiva than the destructive flood.

Conditions of temperature remain fairly equable. The following are figures for the official year, 1924–5:

Station.	*Dry Therm.*	*Wet Therm.*	*Maximum.*	*Minimum.*
Buna	82·2	77·3	87·3	68·4
Kokoda	74·3	72·3	88·5	67·5
Ioma	77·4	74·4	91·5	72·9

Vegetation

By far the greater part of the Northern Division is covered by forest. Some of this has at one time or another been

[1] *Annual Report*, 1904–5, p. 5.

2: Williams E, G-5 (1923-1925) 1928
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probably useless. In the neighbourhood of Dobodura behind Buna and of Ambasi in particular, but sporadically over the whole Division, are to be seen wide stretches of grass country,[1] very beautiful with their copses and belts of wood, but at present entirely unproductive, save that they harbour a good deal of game which is hunted at the annual burning.

The climate in the Northern Division is not worse than elsewhere in Papua. The two seasons are well enough defined though the accepted names 'South-East' and 'North-West' are scarcely applicable in this part of the territory. Indeed, the interior of the forest-covered plains seems seldom visited by strong winds from any quarter, and on either side of the track high trees will stand in an almost absolute stillness. When occasionally some overhead wind swoops down, it may do so with great violence, overthrowing the shallow-rooted trees or tearing down a litter of feebly-resisting branches.

The natives call the South-East season *Twira*, because it is first announced by the scarlet blossoming of the *Twira* tree, one of many that blush unseen by an unobservant European. It is a season of comparatively dry clear weather, sometimes of drought; of many brilliant days and star-lit nights, when one may be glad of a blanket; of dry tracks and transparent, fordable streams. The North-West they call *Tuperi*. 'This is the time of rains and plenty. The nuts of the *Tauga*, which blossomed at the beginning of the South-East, begin to fall. The weather is more oppressive and almost every evening the thunder is rumbling in the valleys of the range. The rain comes down towards evening, there are heavy falls in the mountains, and the rivers are brown and swollen.

The river may rise with extraordinary swiftness. Splashing over a shallow bed of rocks and pebbles, or pausing in some quiet pool overhung by trees but

[1] The grass referred to (*Imperata arundinacea*) is commonly known in Papua as *Kunai*, or 'pale grass'. It is presumably identical with *alang-alang* and grows to a height of 5 feet or more.

2: Williams E, G-5 (1923-1925) 1928
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133 illuminated to its depths by a broad shaft of sunshine, no more charming stream could be imagined than the upper Opi in dry weather. But if overnight the thunder has been very loud in the hills, the next morning may see the Opi a brown swirling flood, bearing along uprooted trees and piling them one upon another against every obstacle. It will soon overflow its deep banks, and the surrounding bush is submerged and impassable. One may be astonished, passing along a dry track some few days after such a flood, to find a raft or canoe left high and dry among the trees, or to see, head-high on the trunks and leaves, traces of mud left by the last inundation.

The water will subside rapidly with very little damage done. The occasional flood is rather welcomed than feared, for it is the hunter's opportunity. The small [224] game of the forest—rats, hedgehogs, the little marsupial called *Aisi*—are driven from their shelters and are easy prey for the native dogs. There are shallow depressions and hollows which in flood-time become water-courses, [226] and in these men and women are using their scoop-nets or setting their cage-like traps for the insignificant fish which are making their way back to the river with the falling water. Last and least there are the frogs who 'come down from the trees' in the flood-time, to be finally caught in the hands of the women. Sometimes the flood does some damage in the garden; but the water rises and falls so quickly and withal so steadily that it does little actual violence, and the taro seems quite able to survive a submergence. On the whole we are prone to over-estimate the ill effects of the flood in this district.

132 A far more serious affliction is the occasional drought. 262 After a long spell of fine weather the garden ground becomes dry and hard; the taro leaves droop and the young shoots die off. Even the swamps subside and sago-making is made difficult by lack of water. The hunting of small game and the fishing in creeks are hindered. The result of all this may be a real scarcity. To eke out their supplies the people will have recourse to fern fronds,

2: Williams E, G-5 (1923-1925) 1928
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edible leaves, and roots gathered in the bush, and will fall back on sago, which is plentiful by the coast but rare in the interior. Though there is sometimes scarcity and a certain amount of hardship, these are never, I believe, very prolonged; and they never approach to genuine famine.

Dry weather, like wet weather, may, when it is inconvenient, be ascribed to the machinations of a sorcerer. If a man go a journey and be overtaken by torrents of rain which compel him to build a bush shelter and wait, he is likely to say, 'My enemy so-and-so must have done this; he knew I wished to travel.' So when the fine weather lasts so long as to become a plague, people will bethink themselves of some sinister old man and say, 'he has made sun medicine and is keeping the bamboo "bottle" in the heat over his fire.' The people of 'Wire Rope' on the river Kumusi had a singular reputation (which they were perhaps careful to maintain) for sun-magic. There are many rain-makers and many methods of rain-making. Where the dry weather is a mere whim of Nature's, they will avail; where it is the result of sorcery, they can do nothing. At any rate the long dry spell is unwelcome weather to the Orokaiva.

Before proceeding to the principal occupation and support of the people, viz. gardening, one may dismiss with a brief mention the other phases of the food quest.

As hunters the Orokaiva are always opportunists. No man travels through the real bush without his spears and his dog, if he possess one. He is extraordinarily alert to detect his game, be it bush-pig, rat, or lizard, and will spare himself no trouble to capture the most insignificant quarry. Communally he hunts with the long net, into which the pig or wallaby is driven through the bush by a semicircle of beaters, while some stand ready behind the net with their spears. The grass plains are burnt off yearly, and yield a variety of game, from pigs and pythons to ground-rats.

The common hunting-traps are (1) *Bagi*, in which the unsuspicious pig, nosing at his bait of sago pith, releases